### **Abstracts**

This section of the JOURNAL is published in collaboration with two abstracting Journals, ABSTRACTS OF WORLD MEDICINE and OPHTHALMIC LITERATURE, published by the British Medical Association. The abstracts are divided into the following sections:

Syphilis (Clinical, Therapy, Serology, Biological False Positive Phenomenon, Pathology, Experimental). Gonorrhoea.

Nongonococcal Urethritis and Allied Conditions.

Reiter's Disease and Allied Conditions. Antibiotics and Chemotherapy. Public Health and Social Aspects. Miscellaneous.

After each subsection of abstracts follows a list of articles that have been noted but not abstracted.

#### Syphilis Clinical

Seronegative Dementia Paralytica: Report of a Case CH'IEN, L., HATHAWAY, B. M., and ISRAEL, C. W. (1970) J. Neurol. Neurosurg. Psychiat., 33, 376 5 figs, 14 refs

The authors, from the Division of Neurology and the Department of Pathology, University of Alabama Medical Center, and from the Department of Ophthalmology, Bascom Palmer Eye Institute, Miami, Florida, report that general paralysis of the insane (GPI) may present diagnostic difficulties when routine serological tests using nontreponemal antigens give negative results. They present the case of a patient suffering from dementia in which the VDRL test gave negative results initially on the serum and persistently negative results on the cerebrospinal fluid (CSF). On one occasion before treatment the CSF cell count was 15 polymorphonuclear leucocytes per cmm. with 13 lymphocytes per cmm. On three occasions the cell count was normal; the protein level was as low as 62 mg./100 ml. and as high as 76 mg./ 100 ml. A brain biopsy showed active meningoencephalitis; a treponemelike form was found in the brain by FA staining. Because of the experience of the other workers in this field and of their experience with this patient, the authors advise the use of the FTA-ABS test as a screening procedure in the cases of patients with neurological problems that might be due to syphilis. They stress the necessity for further research. Eric Dunlop

Syphilitic Disorders of the Spine JOHNS, D. (1970) J. Bone Jt Surg., 52-B, 724 9 figs, 11 refs

# Occurrence of Fetal Syphilis after a Nonreactive Early Gestational Serologic Test

AL-SALIHI, F. L., CURRAN, J. P., and SHTEIR, O. A. (1971) *J. Pediat.*, **78**, 121 7 refs

Incidence of Syphilis in the Bantu: Survey of 587 Cases from Baragwanath Hospital DOGLIOTTI, M. (1971) S. Afr. med. J., 45, 8 2 figs, 26 refs

#### Syphilis Serology

Immunoglobulin Class of Fluorescent Treponemal Antibodies in Syphilis ATWOOD, W. G., and MILLER, J. L. (1970) Int. J. Derm., 9, 259

147 sera reactive in the FTA-ABS test were studied at the College of Physicians and Surgeons, Columbia University, New York. In all the diagnosis of syphilis was confirmed by

clinical examination, darkground studies, or other serological findings including TPI tests. A modified FTA-ABS test was performed with conjugates specific for IgG, IgM, and IgA classes of immunoglobulins. The results of these qualitative tests are summarized below.

The major anti-treponemal antibody at all stages of the disease was IgG; IgA was found to be of little significance, but IgM varied, being found most frequently in early and late syphilis. No correlation could be demonstrated between the frequency of the presence of IgM and the age of the patient, the estimated duration of the disease, the adequacy of previous antisyphilitic treatment, or the time since treatment. It is suggested that the high incidence of IgM antibody in patients with late syphilis may reflect the continued presence of treponemal antigens. [Quantitative rather than qualitative estimations of the antitreponemal antibody titres in the immunoglobulin classes might have been more informative.]

A. E. Wilkinson

[Reprinted from Abstracts on Hygiene, by permission of the Editor.]

Stage of syphilis	Sera	Percentage reactivity with conjugates against		
		IgG	IgM	Ig A
Primary	11	100	100	9
Secondary	12	100	100	33
Latent Spinal fluid normal	29	100	34	0
Spinal fluid untested	65	100	57	4
Tertiary	22	100	73	14
Congenital	8	100	50	13

#### Serodiagnosis of Syphilis with a Passive Haemagglutination Test with a Treponemal Antigen

(Sero-diagnostic de la syphilis utilisant une reaction d'hémagglutination passive avec un antigène tréponémique) PARIS-HAMELIN, A., CATALAN, F., and VAISMAN, A. (1970) Bull. Soc. franç. Derm. Syph., 77, 474

The antigen used in this TPHA test is a formolized suspension of tanned sheep red cells sensitized with material from Treponema pallidum. It was compared with lipoidal antigen, TPI, and FTA-200 tests at the Fournier Institute, Paris. 94 human sera and 24 spinal fluids were tested. In primary syphilis reactivity in the TPHA test was slower to develop than that in the FTA-200 test, and the TPHA test was found to be less sensitive than the FTA-200 and TPI tests in a small number of sera from patients with syphilis of long standing. Comparative rates of development of antibody were also studied in serial samples of sera from experimentally infected rabbits. Reactivity in the FTA-200 test was again found to develop more rapidly than that in the TPHA test. In sera from rabbits treated with penicillin one month after infection, the reverse was found, the FTA titre falling more rapidly than the titres of the reagin, TPI, and TPHA tests.

The TPHA test gave negative results with rabbit antisera against Reiter treponemes and against cardiolipin antigen. It, and the other tests, gave positive results with sera from rabbits infected with the treponemes causing endemic syphilis, yaws, and cuniculosis, although the TPI test was found to be negative in all six animals of the last group.

A. E. Wilkinson

[Reprinted from Abstracts on Hygiene, by permission of the Editor.]

Haemagglutination Test utilizing Pathogenic T. pallidum (TPHA) in Comparison with Other Serologic Tests for Syphilis TRINGALI, G. (1970) Ann. Sclavo, **12,** 311

This report from the Institute of Hygiene of the University of Palermo describes the results of a passive haemagglutination test (TPHA) in

which formolized tanned sheep red cells sensitized with material from Treponema pallidum are used as antigen. Reagents for the test were obtained from a commercial source. 200 sera of known provenance were tested in parallel with lipoidal antigen, TPI, and FTA-ABS tests. These included 43 from cases of untreated early syphilis, 41 of treated early syphilis, 66 of treated late or latent disease, and 55 from patients thought not to have syphilis including thirteen whose sera had given false positive results with lipoidal antigen tests.

The TPHA test showed comparable reactivity with the FTA-ABS test and was considerably more sensitive than the TPI test at all stages of syphilis. None of these three tests reacted with the presumed normal sera or with those giving false positive reactions. The simplicity, ease of quantitation, and sensitivity of the TPHA test suggest that it would be of value as a routine procedure. [The low sensitivity of the TPI test in treated latent and late syphilis in this study (40 to 60 per cent.) is surprising and contrary to general experience.]

A. E. Wilkinson

[Reprinted from Abstracts on Hygiene, by permission of the Editor.]

Seroresistance in Syphilis and its Causes [In Russian] BUCHAROWICZ, M. N. (1970) Przegl. derm., 57, 621 4 refs

#### **Syphilis** Pathology

Diagnostic Procedures for the Identification of Treponemapallidum-like Organisms in Ocular Fluids and Tissues YOGESWARI, L. (1970) J. Madras St. ophthal. Ass., 7, 85

Significance of T.-pallidum-like Organisms discovered recently in Ocular Fluids and Tissues снаско, с. w. (1970) J. Madras St. ophthal. Ass., 7, 87

Electron Microscopy of Endoflagella and Microtubules in Treponema Reiter HOUGER, K. H., and BIRCH-ANDERSEN, A. (1971) Acta path. microbiol. scand., 79B, 37 23 figs, 23 refs

Attempted Culture of Pathogenic Treponema pallidum in the Presence of Various Bacteria and in their Culture Filtrates METZGER, M., and RUDNICKA, I. (1970) Arch. Immunol. Ther. exp. (Warsz.), 18, 630 12 refs

Study on Labelling Reiter Treponemes and Treponema pallidum with 14C METZGER, M., and MICHALSKA, E. (1970) Arch. Immunol. Ther. exp. (Warsz.), 18, 635 4 figs, 25 refs

Peptidase Activity in Reiter Treponemes SZEWCZUK, A., and METZGER, M. (1970) Arch. Immunol. Ther. exp. (Warsz.), 18, 643 2 figs, 28 refs

#### Gonorrhoea

Septic Gonococcal Dermatitis BARR, J., and DANIELSSON, D. (1971) Brit. med. J., 1, 482 2 figs, 31 refs

Since 1968, a series of 23 patients (19 women and 4 men) has been seen at the hospital in Örebro City, Sweden, with what the authors term septic gonococcal dermatitis. The overall incidence in gonorrhoea was found to be 1.9 per cent. (3 per cent. for females and 0.7 per cent. for males).

The main features of the condition were fever associated with embolic skin lesions and minor affections of joints, so consequently few presented initially to the venereologist. The duration of symptoms was usually short. Eighteen patients were known to have had bouts of pyrexia, and all except two had symptoms in one or more joints, with pain alone or often combined with swelling, redness, and non-pitting oedema of periarticular tissues. Joint effusions were slight or absent. The skin lesions were not usually a presenting feature but when found by careful examination were the most important diagnostic sign. The lesions varied from discrete violaceous maculopapules and vesiculopustules 1 to 5 mm. in diameter, to haemorrhagic papules and vesiculopustules 4 to 20 mm. in diameter, often surrounded by an erythematous zone. Two patients had painful nodules rather like those of erythema

nodosum. The number of lesions varied from one to more than ten. They were irregularly distributed, with a predilection for the extremities and the periarticular regions. Genitourinary symptoms and signs in both sexes were either absent or minimal. The condition had to be differentiated from chronic meningococcal septicaemia.

The gonococcus was isolated from all the patients except one - from the urethra of three men, from the genitourinary tract of seventeen women and from the blood of one man and two women. Blood cultures from another sixteen patients were negative. Culture from the skin lesions was attempted in eight patients with negative results. However, with immunofluorescent techniques gonococci were detected in smears from skin lesions in fourteen of sixteen patients examined. Complement fixing antibodies to N. gonorrhoeae were found in serum specimens from seventeen of 21 patients examined and most demonstrated rising titres.

All patients responded promptly to penicillin. Most were given a 12-day course, starting with 4.5 mega units crystalline penicillin intramuscularly daily for 2 days followed by oral penicillin V. Some patients showed a tendency to spontaneous recovery before treatment was begun.

P. Rodin

#### Gonococcal Ophthalmia Neonatorum despite Treatment with Antibacterial Eye-drops

SCHOFIELD, C. B. S., and SHANKS, R. A. (1971) Brit. med. J., 1, 257 15 refs

Over a 5-year period (1964-8), 48 cases of gonococcal ophthalmia neonatorum were notified to the department of venereology in Glasgow; 37 of these babies were born in hospital and eleven at home. The conjunctivitis, usually recorded as a 'sticky eye', developed between 1 and 13 days after birth, 36 by the fourth day.

Diagnosis by culture of Neisseria gonorrhoeae was delayed in some cases up to 30 days after the appearance of the signs for those born in hospital and 15 days for those born at home, usually because of the blind use of antibacterial eye-drops which produced temporary alleviation of the signs without eradicating the infection; chloramphenicol was noteworthy in this respect.

A 'sticky eye' will resolve without the use of antibacterial agents, ophthalmia neonatorum will not. When it is decided to use an antibacterial agent, pretreatment conjunctival smears for immediate staining and swabs for culture should be taken and the case notified to the medical officer of health.

Gonococcal ophthalmia is a preventable disease. In view of the obstetricians' already heavily committed clinical work load, there is need for venereologists to collaborate, on consultation and within the maternity hospitals wherever possible, in the screening of antenatal patients for candidiasis and trichomoniasis as well for gonorrhoea. Some target groups, those with a pathological vaginal discharge or with certain adverse social factors, warrant more thorough investigation, while all those treated require further examination to ensure cure. Authors' summary

Preservation of Gonococci in Liquid Nitrogen WARD, M. E., and WATT, P. J. (1971) J. clin. Path., 24, 122 7 refs

Fluorescence Methods for the Demonstration of Gonococci in Venereological Practice (Über die Fluoreszenzmethode zum Nachweis von Gonokokken in der venereologischen Praxis) MEDEBACH, н. (1971) Z. Haut-u. Geschl.-Kr., 46, 159 2 figs, 7 refs

The Elusive Gonococcus PORTER, W. L. (1970) Delaware med. 7., 42, 346 28 refs

#### Rapid Diagnosis of Gonorrhoea LARSON, N. K., CLARK, J. L., and HOLLOWAY, W. J. (1970) Delaware med. 7., 42, 351 3 refs

Treatment of Gonorrhoea with Spectinomycin and Rifampicin LABOWITZ, R., PORTER, W. L., and HOLLOWAY, W. J. (1970) Delaware med. J., 42, 353 4 refs

Cephalexin in the Treatment of Gonorrhea TAYLOR, W. A., and HOLLOWAY, W. J. (1970) Delaware med. J., 42, 356 10 refs

#### Nongonococcal urethritis and allied conditions

Infected Infarcts of the Testis: A Study of 18 Cases preceded by Pyogenic Epididymo-orchitis HOURIHANE, D. O'B. (1970) 7. clin. Path., 23, 668 16 figs, 5 refs

Apart from torsion and occasional involvement in polyarteritis nodosa, testicular infarction is rare. In a 6year period eighteen testes with infarcts (excluding cases of torsion) were received at the pathology department, Trinity College, Dublin. The ages of the patients ranged from 26 to 74 years, the majority being between 30 and 65 years. Most had a history of cystitis, usually due to E. coli, with subsequent development of epididymo-orchitis. Conservative treatment failed to lead to resolution and many developed a fluctuant mass in the testis with scrotal sinuses in some. In all cases in which culture of the testicular tissue was performed, E. coli was grown. The pathological changes in the testes are described in detail. Inflammation of the epididymis was present in all cases, and a feature of seventeen specimens was the presence of totally occluded veins in the epididymis and cord. The evidence suggested that the infected infarcts of the testes were the result of venous occlusions due to thrombosis occurring during an attack of epididymo-orchitis.

Granulomatous orchitis was present in some part of half of the specimens and was thought to result from pyogenic infection of the testicle. What the factor is which determines whether the inflammation is granulomatous or not is unknown. P. Rodin

#### Urethritis in Male Children

WILLIAMS, D. I., and MIKHAEL, B. R. (1971) Proc. roy. Soc. Med., 64, 133 1 fig., 22 refs

Seventeen male children with nongonococcal urethritis had been seen by the authors, from the Institute of Urology, London. Their ages ranged

from 5 to 15 years. In seven the presenting symptom had been bloodstained urethral discharge, in five urethral bleeding apart from micturition, in three dysuria, and in two haematuria. Midstream urines were sterile in all cases and radiological investigations of the urinary tract negative. Urethroscopy showed inflammatory changes in the bulb or posterior urethra in sixteen of the patients. Tetracycline was given for 2 weeks with good initial response. However, eleven subsequently had recurrences and two have developed early stricture formation in the bulb. P. Rodin

Trichomoniasis in a Closed Community: Efficacy of Metronidazole KEIGHLEY, E. E. (1971) Brit. med. J., 1, 207 2 refs

The publication of papers in other countries claiming to show that metronidazole was becoming less effective stimulated the author to undertake a retrospective study of cases treated in the closed community of Holloway Prison in 1967 and 1968. In these years women were treated with 400 mg, metronidazole twice daily after meals for 7 days and each dose was observed to be taken. The minimum period of follow-up was 2 weeks and tests for T. vaginalis comprised wet smear and cytology. Of 496 cases that could be adequately assessed, 488 (98.3 per cent.) were classified as successful. No adverse reactions were observed. There was no evidence that metronidazole had lost its efficacy in the last 10 years. [In earlier years, however, the author had used the drug in doses of 300 mg. twice daily. Cultures were not used in assessing cure.1

P. Rodin

Vaginal Trichomoniasis and Precancerous States of the Cervix: A Preliminary Report DE CARNERI, I., and DI RE, F. (1970) J. Obstet. Gynaec. Brit. Cwlth, 77, 1016 8 refs

Behaviour of T-Mycoplasmas in Tissue Culture MAZZALI, R., and TAYLOR-ROBINSON, D. (1971) J. med. Microbiol., 4, 125 7 figs, 39 refs

Diagnosis and Treatment of Urethritis in the Male

(Diagnose und Therapie der Urethritis des Mannes)
MEYER-ROHN, J. (1971) Z. Haut-u.
Geschl.-Kr., 46, 153

Inclusion Conjunctivitis in the Newborn Infant GOSCIENSKI, P. J. (1970) J. Pediat., 77, 19 4 figs, 25 refs

Vaginal Infection: I. Microbiological Findings RENKONEN, O. v., WIDHOLM, O., and VARTAINEN, E.

II. The Combination Product Flagyl Comp. (Metronidazole + Nystatin) in the Treatment of Severe Cases of Colpitis VARTAINEN, E., and WIDHOLM, O.

III. Cases of Vaginitis treated with Polmiror VARTIAINEN, E., and WIDHOLM, O.

IV. The Use of Candeptin for Treatment of Moniliasis VARTIAINEN, E., and TERVILÄ, L.

V. Trichomonal and Candidal Colpitis during Pregnancy and its Treatment with Trichomycin Vagitoria VARTIAINEN, E., and TERVILÄ, L. (1970) Acta obstet. gynec. scand., 49, Suppl. 2

### Antibiotics and chemotherapy

Interference of Iron with the Absorption of Tetracyclines in Man NEUVONEN, P. J., GOTHONI, G., HACKMAN, R., and BJÖRKSTEN, K. AF (1970) Brit. med. J., 4, 532 4 figs, 8 refs

Since patients receiving the tetracyclines are often given iron as well, the effect of iron on the absorption of these drugs has been studied in the Department of Pharmacology of the University of Helsinki. Tetracycline, oxytetracycline, methacycline, and doxycycline were each tested on ten healthy subjects aged 20 to 24 yrs.

After overnight fasting, 500 mg. of both tetracycline and oxytetracycline, 300 mg. methacycline, and 200 mg. doxycycline were given orally. Five subjects in each antibiotic group were given the drug alone and five received 200 mg. ferrous sulphate as well. Venous blood samples were collected 1, 2, 3, and 6 hrs after ingestion.

With each tetracycline, when ferrous sulphate was given, the resulting serum levels were significantly less (P < 0.05 to < 0.001) than when the drug was given without iron (mean decrease for tetracycline 40–50 per cent.; oxytetracycline 50–60 per cent.; methacycline 80–85 per cent.; doxycycline 80–90 per cent.). This inhibiting effect was seen at 1, 2, 3, and in some cases 6 hrs after ingestion. Thus doxycycline was the most affected by iron and tetracycline the least affected.

It is concluded that iron, even in small doses, should not be given simultaneously with the tetracyclines because of interference with the absorption of these antibiotics.

Henry Lack

## Public health and social aspects

Modern Trends in Diagnosis, Treatment, and Control of the Venereal Diseases MORTON, R. S. (1970) Singapore med. J., 11, 214 2 figs, 1 ref.

Social Antivenereal Activity of the Polish Eugenic Society in Warsaw (1916-1936) [In Polish] ŁABŁOTNIAK, R. (1970) Przegl. derm., 57, 785 11 refs

Venereal Diseases in Modern Society MORTON, R. S. (1970) Singapore med. J., 11, 210

#### Miscellaneous

Genital Herpes Virus (Type II) Strain Differences AMSTEY, M. S., and BALDUZZI, P. C. (1970) Amer. J. Obstet. Gynec., 106, 924 2 figs, 11 refs

Herpes virus type II was isolated primarily in rabbit kidney cells from the genital lesions of eighteen patients. Identification was made by standard neutralization tests and plaque formation. Infecting other cell systems with the virus isolates showed two distinct cytopathic effects. In HeLa cells, all except one strain produced large multinucleated giant cells; in the one exception small plaque-like areas of small, rounded cells were produced;

giant cells were never seen in culturing this strain in HeLa cells. Infection of WI-38 cells with the two strains also produced different cytopathic effects. Characteristic rounded pyknotic cells with intranuclear inclusions were seen as with most herpes viruses regardless of type. However, the single strain, in addition, produced a margination and stippling of the nucleus with chromatin giving the cells an almost spotted appearance. No clinical differences were noted in the patient harbouring this strain. P. Rodin

#### Herpes Genitalis: Clinical and Cytopathologic Experience with 256 Patients NG, A. B. P., REAGAN,

J. w., and YEN, S. S. C. (1970) Obstet. and Gynec., 36, 645 1 fig., 14 refs

[From the Institute of Pathology and Department of Reproductive Biology, Case Western Reserve University and University Hospitals of Cleveland, Cleveland, Ohio]

Herpes genitalis was most frequently encountered in women of low socioeconomic status and during pregnancy The mean age at detection was 27 years, and over 75 per cent. of the women were aged between 15 and 29 years. Approximately one-third of the patients were asymptomatic and had no genital lesions. The nature and severity of the symptoms, and the type, location, and extent of the genital lesions are discussed in relation to primary and recurrent disease. Herpes genitalis developing during pregnancy did not increase foetal mortality. Detection by suitably collected cellular samples was possible in over 95 per cent. of the patients. Antibody titre was important in evaluating primary and recurrent disease. Treatment was symptomatic. The possible role of herpes virus infection in carcinogenesis of cervical cancer is discussed.

Authors' summary

Therapy of Gilbert-Behçet's Disease (Zur Therapie des Morbus Gilbert-Behçet) HÜBNER, н. (1969, publ. 1970) Ber. dtsch. ophthal. Ges., 70, 430 1 fig., 32 refs A description of four cases. Cortisone

used locally, and systemically in high dosage always had a good effect on the acute inflammatory changes, especially in the anterior segments. Recurrences could not be prevented, however, especially since cortisone has to be discontinued sooner or later. Azathioprine, at a low dosage of 1.5 to 2.0mg./kg. daily, had no influence on the frequency and severity of the recurrences, which could be cut short only by high doses of corticosteroid. The additional application of antibiotics, antiphlogistics, gammaglobulin, etc., did not enhance the therapeutic result. L. Wittels

New Therapeutic Attempts in Behçet's Disease (Report II)

[In Japanese with English Summary] FUTAGAMI, T., AOKI, K., SAITO, K., SANEFUJI, M., FUJIOKA, K., KIKUCHI, к., and като, н. (1970) Rinsho Ganka, 24, 357 4 figs, 8 refs

Fifteen cases of Behçet's syndrome were followed up for from 5 to 15 months after irradiation of the spleen applied in five divided doses of 200r each completed within one week. The treatment resulted in definite improvement in the ocular as well as the extraocular symptoms in two cases, while in three cases only the ocular symptoms improved after therapy. In a further five cases, a slight improvement in the systemic findings set in and the ocular symptoms persisted. In the remaining five cases, the clinical course was not affected by the therapy.

A 10-year-old boy was treated by surgical removal of the thymus. The treatment was followed by development of a state of angio-Behçet syndrome and resulted in death from the Budd-Chiari syndrome.

7. Tsutsui

Cyclophosphamide Therapy of Behçet's Disease GILLS, J. P., JR., and BUCKLEY, C. E., III (1970) Ann. Ophthal. (Chicago), 2, 399 24 refs

A 15-year-old boy with Behçet's disease was treated with cyclophosphamide and prednisone. The condition responded to this combined treatment but not to prednisone alone. Measurements of delayed cutaneous

hypersensitivity were made using a battery of 24 common antigens, each having a known likelihood of reactivity and a defined geometrical mean response in a control population. It is claimed that the evaluation of immunological function in this way may be a reliable measure of the effectiveness of therapy. N. R. Galloway

Behçet's Disease KALBIAN, V. V., and CHALLIS, M. T. (1970) Amer. 7. Med., 49, 823 2 figs, 37 refs

Dysphagia in Behçet's Syndrome ARMA, S., HABIBULLA, K. S., PRICE, J. J., and COLLIS, J. L. (1971) Thorax, 26, 155 2 figs, 22 refs

Reiter's Disease and Behcet's Syndrome (Reitersche Erkrankung, Behçetsches Syndrom) MARTENET, A.-C. (1970) Ber. dtsch. ophthal. Ges., 70, 306 Bibl.

Problem of Medical Treatment of Behçet's Disease (Zur Frage der medikamentösen Behandlung des Morbus Behçet) KLEINHANS, K. (1970) Ber. dtsch. ophthal. Ges... **70,** 425 3 figs, 8 refs

Adamantiades-Behçet Syndrome (Beitrag zum Adamantiades-Behçet-Syndrom) ROSSOCHOWITZ, W., and METZ, G. (1970) Klin, Mbl. Augenheilk., 157, 414 18 refs

Torsion of Testicular Appendages: Presentation of 43 New Cases and Collective Review SKOGLUND, R. W., MCROBERTS, J. W., and RAGDE, н. (1970) J. Urol. (Baltimore), 104, 598 2 figs, 13 refs

Acute Scrotum in Children with Emphasis on Torsion of Spermatic Cord MOHARIB, N. H., and KRAHN, H. P. (1970) J. Urol. (Baltimore), **104**, 601 10 refs

Torsion of Spermatic Cord: Review of Literature and Analysis of 70 New Cases SKOGLUND, R. W., MCROBERTS, J. W., and RAGDE, H. (1970) J. Urol. (Baltimore), 104, 604